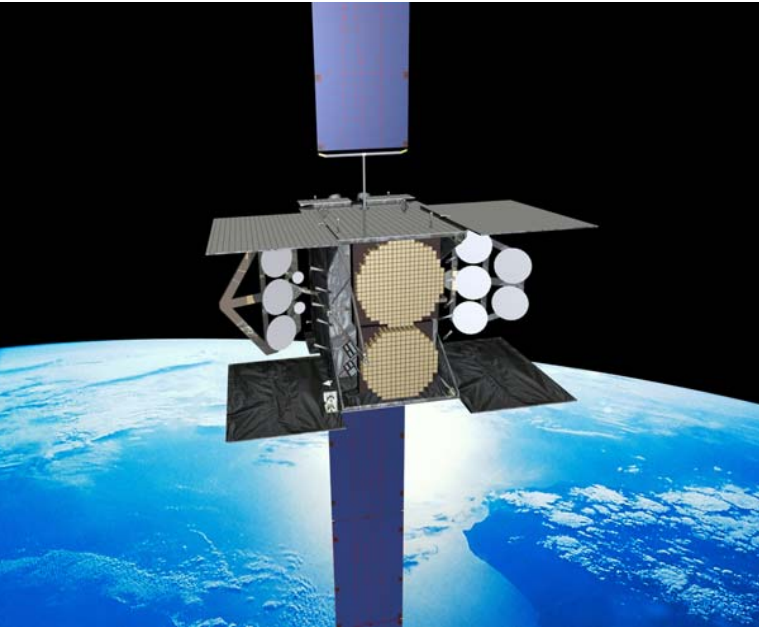


# WGS

## Wideband Gapfiller Satellites (WGS)



### Mission/Vision

WGS provides flexible, high-capacity communications for our Nation's warfighters by developing, launching and testing the Wideband Gapfiller Satellites (WGS) and control systems. WGS will provide a quantum leap in communications bandwidth to our infrastructure users, soldiers, sailors, airmen and marines.

### Description

WGS is a multi-Service program that leverages commercial methods and technological advances in the satellite industry to rapidly design, build, launch and support a constellation of highly capable military communications satellites.

Upon its first launch into geosynchronous orbit in FY06, WGS Flight 1 will be the Department of Defense's highest capacity communication satellite. Five satellites are currently planned to be on-orbit providing service in both the X and Ka-band frequency spectrums. WGS will augment X-band communications now provided by the Defense Satellite Communications System (DSCS) and one-way Ka-band service provided by the Global Broadcast Service (GBS). Additionally, WGS will provide a new two-way Ka-band service.

These digitally channelized, transponded satellites provide a quantum leap in communications capacity, connectivity and flexibility for U.S. military forces while maintaining interoperability with existing and programmed X- and Ka-band terminals.

WGS will provide essential communications services for Combatant Commanders to command and control their tactical forces. Tactical forces will rely on WGS to provide high-capacity connectivity into the terrestrial portion of the Defense Information Systems Network (DISN).

The first Wideband Gapfiller Satellite will be launched in FY06, and will be followed by two more satellites in FY06 and FY07. Both the Delta IV and Atlas V Evolved Expendable Launch Vehicles (EELV) will be used. Satellites 4 and 5 are anticipated for launches later.

The Wideband Gapfiller Satellite system is composed of the following principal segments:

- Space Segment (satellites)
- Terminal Segment (users)
- Control Segment (operators)

The U.S. MILSATCOM Joint Program Office (MJPO), Space and Missile Systems Center (SMC), is responsible for development, acquisition and sustainment of the WGS Program.



## General Characteristics

Primary Function:	High capacity military communications satellite
Primary Contractor:	Boeing Satellite Systems
Satellite Bus:	Boeing 702
Weight:	Approx. 13,000 lbs at launch, 7,600 lbs on-orbit
Orbit altitude:	22,300 miles
Payload:	Transponded, cross-banded-X and Ka-band communications suite
Antennas:	8 beam, transmit and receive X-band Phased arrays and 10 Ka-band Gimbaleed Dish Antennas, 1 X-band Earth coverage
Capability:	39 125-MHz Channels via digital Channelizer / router
Launch Vehicle:	Delta IV and Atlas V EELVs
Inventory:	3 on contract, 2 more planned
Unit Cost:	Approx. \$300 million
Control:	SGLS, USB and in-band (X, Ka) control

*WGS Brings Bandwidth to the Battlefield*



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